ABSTRACT OF THE DISCLOSURE

The present invention relates to novel modified fatty acid analogs, where a positron or gamma-emitting label is placed at a position on a fatty acid backbone and an organic substituent is substituted at the 2,3; 3,4; 4,5; 5,6 and other sequence positions of a fatty acid backbone. These novel fatty acid analogs are designed to enter the tissues of interest by the same long chain fatty acid carrier mechanism as natural fatty acids, however, functional substituents in the 2,3; 3,4; 4,5; 5,6 and other sequence positions, block the catabolic pathway, thus trapping these analogs in a virtually unmodified form in the tissues of interest.